Katharine Anne Rawlinson, PhD — Curriculum Vitae

Wellcome Sanger Institute
Hinxton, Cambridgeshire, CB10 1SA, UK

Email: kr16@sanger.ac.uk
Citizenship: British

Research interests: Photobiology, Chronobiology, Transcriptomics, Spatial gene expression, Microscopy, Cellular and Molecular Neuroscience, Flatworms.

Current Position

2016-2022 **Janet Thornton Fellow**, Parasite Genomics, Wellcome Sanger Institute, UK.
Photobiology and daily rhythms of the human blood fluke, Schistosoma mansoni

Education

2004 **PhD, Marine Biology**, University College Cork, Ireland
Thesis: *Effects of diurnal vertical migrations on pelagic biodiversity assessment.*
Supervised by Prof. John Davenport and Dr. David K. A. Barnes

1998 **MSc, Advanced Methods in Taxonomy and Biodiversity**
Imperial College/Natural History Museum, London, U.K.

1996 **BSc (Hons), Marine Biology w/ French**, University of St. Andrews, Scotland

Postdoctoral Training

Dec. 2015-July 2019 **Postdoctoral Research Associate**
Department of Zoology, University of Cambridge, UK
Photoreceptors in flatworms

Dec. 2011-Sept. 2014 **Postdoctoral Research Associate** (Lab of Prof. Brian K. Hall)
Department of Biology, Dalhousie University, Canada
Development and evolution of the sensory nervous system in flatworms.
(4 months full-time; 21 months 0.6 FTE).

[Mar. 2012-Mar. 2013] **Maternity Leave**

Mar. 2010-Nov. 2011 **Postdoctoral Research Associate** (Lab of Prof. Max Telford)
Department of Genetics, Evolution and Environment, UCL, UK
Larval development in polyclad flatworms

[Oct. 2010-Aug. 2011] **Maternity Leave**

Sept. 2007-Aug. 2009 **Smithsonian Marine Science Network Postdoctoral Fellow** (Dr Mary Rice) Smithsonian Marine Station, Fort Pierce, USA
Comparative embryonic and post-embryonic development of polyclad flatworms

Feb. 2005-Jan. 2007 **Postdoctoral Research Associate** (Lab of Prof. Marian Litvaitis)
Department of Biology, University of New Hampshire, USA
Modern inventory of the polyclad flatworm fauna of the wider Caribbean

Courses taken

May 2010 Marine Evolutionary and Ecological Genomics (Station Biologique, Roscoff)

Grants, Fellowships and Awards

2016 Global Genome Initiative Award, Smithsonian Institution (co-PI, $19,393USD)
2015 Janet Thornton Fellowship, Wellcome Sanger Institute (£164,000)
2015 Isaac Newton Trust (with Prof Michael Akam), University of Cambridge (£36,000)
2015 Lerner-Gray Memorial Fund, American Museum of Natural History ($2,000USD)
2014 'Experiment' crowd-funding ($5,714USD)
2014 Atlanta Reef Club Research Grant (US$10,400)
2013 NSF EDEN research award ($3,000USD)
2011 Nova Scotia Museum Research Grant ($3,400CAN)
2007 Smithsonian Marine Science Network Postdoctoral Fellowship (US $96,000)

Publications

2022

Duque-Correa MA, Goulding D, Rodgers FH, Gillis JA, Cormie C, Rawlinson KA, Bancroft AJ, Bennett HM, Lotkowska M, Reid AJ, Speak AO, Scott P, Redshaw N, Tolley C, McCarthy C, Brandt C, Sharpe C, Ridley C, Moya JG, Carneiro CM, Starborg T, Hayes KS, Holroyd N, Sanders M, Thornton DJ, Grencis RK & Berriman M. **Defining the early stages of intestinal colonisation by whipworms.** *Nat Commun (in press)*

2021

Rawlinson KA*, Reid A, Lu Z, Driguez P, Wawer A, Coghlan A, Sankaranarayanan G, Buddenborg SK, Diaz Soria CL, McCarthy C, Holroyd N, Sanders M, Wilcockson D, Hoffmann K, Collins J, Rinaldi G, Berriman M* (2021) **Daily rhythms in gene expression of the human parasite *Schistosoma mansoni.*** *BMC Biology* 19, 255 (2021). https://doi.org/10.1186/s12915-021-01189-9

Lu Z, Sankaranarayanan G, Rawlinson KA, Offord V, Brindley PJ, Berriman M and Rinaldi G (2021) **The transcriptome of *Schistosoma mansoni* developing eggs reveals key mediators in pathogenesis and life cycle propagation**. *Front. Trop. Dis*. 2:713123. doi: 10.3389/fitd.2021.713123

2020

Diaz Soria, C.L., Lee, J., Chong, T. Tracey A, Young MD, Andrews T, Hall Cm Ng BL, Rawlinson KA, Doyle SR, Leonard S, Lu Z, Bennett HM, Rinaldi G, Newmark PA, Berriman M (2020) **Single-cell atlas of the first intra-mammalian developmental stage of the human parasite *Schistosoma mansoni***. *Nat Commun* **11,** 6411 (2020). doi.org/10.1038/s41467-020-20092-5

2019

Rawlinson KA*, Lapraz F, Ballister ER, Terasaki M, Rodgers J, McDowell RJ, Girstmair J, Criswell KE, Boldogkoi M, Simpson F, Goulding D, Cormie C, Hall BK, Lucas RJ, Telford MJ. (2019) **Extraocular, rod-like photoreceptors in a flatworm express xenopsin photopigment**. *eLife*;8:e45465 DOI: 10.7554/eLife.45465.

Barton JA*, Hutson KS, Bourne DG, Humphrey C, Dybala C, Rawlinson KA* **The life cycle of the *Acropora* coral-eating flatworm (AEFW), *Prosthiostomum acroporae*; the influence of temperature and management guidelines**. *Frontiers in Marine Science.* 6:524. doi: 10.3389/fmars.2019.00524.

2018

Mouahid G, Rognon A, de Carvalho AR, Driguez P, Geyer K, Karinshak S, Luviano N, Mann V, Quack T, Rawlinson KA**,** Wendt G, Grunau C, Moné H (2018). **Transplantation of *schistosome* sporocysts between host snails: a video guide**. *Wellcome Open Res.* 3:3.

2015

Egger B, Lapraz F, Tomiczek B, Müller S, Dessimoz C, Girstmair J, Škunca N, Rawlinson KA, Cameron C, Beli E, Todaro MA, Gammoudi M, Noreña C, Telford MJ (2015). **A transcriptomic-phylogenomic analysis of the evolutionary relationships of flatworms.** *Curr. Biol.* **25**: 1-7.

2014

Rawlinson KA* (2014) **The diversity, development and evolution of polyclad flatworm larvae.** *BMC EvoDevo* **5**: 9.

2013

Lapraz F, Rawlinson, KA, Girstmair J, Tomiczek B, Berger J, Jékely G, Telford M, Egger B (2013) **Put a tiger in your tank: the polyclad flatworm *Maritigrella crozieri* as a proposed model for evo-devo.** *BMC EvoDevo* **4**: 29 (Highly accessed).

2012

Rawlinson KA* and Stella JS (2012) **Discovery of the corallivorous polyclad flatworm, *Amakusaplana acroporae*, on the Great Barrier Reef, Australia – the first report from the wild**. *PLoS ONE* **7**: e42240.

2011

Rawlinson KA*, Gillis JA, Billings RE, Borneman EH (2011) **Taxonomy and life history of the *Acropora*-eating polyclad flatworm: *Amakusaplana acroporae* nov. sp. (Polycladida, Prosthiostomidae).** *Coral Reefs* **30**: 693-705.

Gillis JA, Rawlinson KA, Bell J, Lyon WS, Baker CVH, Shubin NH (2011) **Holocephalan embryos provide evidence for gill arch appendage reduction and opercular evolution in cartilaginous fishes.** *Proc. Nat'l Acad. Sci. U.S.A.* **108**: 1507-1512.

2010

Rawlinson KA* (2010) **Embryonic and post-embryonic development of the polyclad flatworm *Maritigrella crozieri*; implications for the evolution of spiralian life history traits**. *Front. Zool.* **7**: 12.

2009

Barnes DKA and Rawlinson KA* (2009). **Traditional coastal invertebrate fisheries in southwest Madagascar.** *JMBA* **89**: 1589-1596.

2008

Rawlinson KA, Bolaños DM, Liana MK and Litvaitis MK (2008). **Reproduction, Development and Parental Care of two direct developing flatworms (Platyhelminthes: Polycladida: Acotylea).** *J. Nat. Hist.* **42**: 2173-2192.

Rawlinson KA and Litvaitis MK (2008) **Cotylea (Platyhelminthes, Polycladida): A Cladistic Analysis of Morphology.** *Invert. Biol.* **127**: 121-138.

Rawlinson KA* (2008) **Biodiversity of coastal polyclad flatworm assemblages in the wider Caribbean.** *Mar. Biol.* **153**: 769-778.

2006

Sims DW, Wearmouth VJ, Southall EJ, Hill J, Moore P, Rawlinson KA, Hutchinson N, Budd GC, Metcalfe JD, Nash JP and Morritt D (2006) **Hunt warm, rest cool: Bioenergetic efficiency underlying diel vertical migration of a benthic shark.** *J. Anim. Ecol.* **75**: 176-190.

2005

Rawlinson KA*, Davenport J and Barnes DKA (2005) **Temporal variation in diversity and community structure of a semi-isolated neuston community.** *Proc. Roy. Ir. Acad.* **105**: 107-122.

Rawlinson KA*, Davenport J and Barnes DKA (2005) **Tidal exchange of zooplankton between Lough Hyne and the adjacent coast.** *Estuar. Coast. Shelf Sci.* **62**: 205-215.

2004

Rawlinson KA*, Davenport J and Barnes DKA (2004**) Diurnal vertical migration strategies with respect to advection and stratification in a semi-enclosed lough: a comparison of mero- and holozooplankton.** *Mar. Biol.* **144**: 935-946.

Selected seminars and conference presentations

Rawlinson KA. Opsins, flatworms and their photoreceptors. Living Systems Institute, University of Exeter, UK. Feb. 2019.

Rawlinson KA. Extra-ocular, rod-like photoreceptors in a flatworm. Euro Evo Devo Conference, Galway, Ireland. June 2018.

Rawlinson KA. Research into the control of the *Acropora* coral-eating flatworm. Atlanta Reef Club, Atlanta, GA, USA. Sept, 2014.

Rawlinson KA. Polyclad flatworms: models for evolutionary and ecological developmental biology. Whitney Marine Lab, University of Florida, USA. Aug, 2014.

Rawlinson KA. On the (mucous) trail of a coral killer: the *Acropora*-eating flatworm. Biology Department, University of Hawaii at Manoa, Hawaii, USA. Feb, 2013.

Rawlinson KA. The AEFW (*Acropora*-eating flatworm): where does it come from and what eats it? Marine Aquarium Conference of North America. Dallas, TX, USA. Sept, 2012.

Rawlinson KA. The evolution of polyclad flatworm larvae. Victoria Marine Science Consortium, Queenscliff, Australia. Feb, 2008.

Rawlinson KA. The evolution and diversity of polyclad flatworms. Smithsonian Marine Station Seminar, Fort Pierce, FL, U.S.A. August, 2007.

Rawlinson KA. Checking out Caribbean Polyclads – a barcoding biodiversity project. University of Rhode Island, Department of Biological Sciences, Kingston, RI, U.S.A. March, 2005

Popular Science, Media and Outreach

Wellcome Sanger Institute public engagement (presentations to A-level students) 2017-2019.

"Atlanta Reef Club helps wage war on the *Acropora*-eating Flatworm!"
[http://www.thomasvisionreef.com/featured-articles/2014/9/13/atlanta-reef-club-wages-war]
"*Acropora*-eating flatworm research"
[https://experiment.com/projects/the-life-cycle-of-a-coral-killer-the-acropora-eating-flatworm]

"On the (Mucous) Trail of Coral Killers: *Acropora*-Eating Flatworms", (article by Rawlinson KA) [http://www.reefs.com/forum/reefs-magazine/145123-mucous-trail-coral-killers-acropora-eating-flatworms.html]

"Nasty aquarium pest found in the wild". Australian Broadcasting Corporation Science Online [http://www.abc.net.au/science/articles/2012/08/02/3557563.htm]

"Dal researcher discovers elusive coral predator in the wild", Dalhousie University News [http://www.dal.ca/news/2012/08/02/dalhousie-researcher-discovers-elusive-coral-predator-in-the-wil.html]

"Coral-eating flatworms", Canadian Broadcasting Corporation Radio [http://www.cbc.ca/player/Shows/ID/2264707265/]

Teaching and Mentorship

2016-2020 External supervisor to PhD student, James Cook University, Queensland
2006-2007 M.Sc. student co-advisor, Department of Zoology, University of New Hampshire
2001-2004 Teaching Assistant/Demonstrator Marine Biology, University College Cork
2001-2004 Field Course Instructor, Marine Ecology, University College Cork

Professional Service

2017-2020 Department of Zoology, University of Cambridge, Graduate Student Mentor
2016-2020 Department of Zoology, University of Cambridge, Graduate Education Committee
2008-2009 Seminar Series Organiser, Smithsonian Marine Station, Fort Pierce, Florida
ad hoc reviewer for: *BMC EvoDevo*, *Canadian Journal of Zoology*, *Coral Reefs*, *Invertebrate Biology*, *Marine Biology*, *Journal of the Marine Biological Association UK*, *Aquatic Conservation: Marine and Freshwater Ecosystems*, *Marine Biodiversity Records*, *Journal of the Bombay Natural History Society*, *Journal of Invertebrate Reproduction and Development*, *Raffles Bulletin of Zoology, Zookeys*, *Zoological Journal of the Linnean Society*, *Zootaxa*.